Course MATH 645 Section 1       TR 9:30–10:45am       RB 418

Instructor Dr. Hanspeter Fischer

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Office Hours Mon 2:00–2:50pm, Tue 11:00–11:50am, Wed 11:00–11:50am, Thu 11:00–11:50am, Fri 2:00–2:50pm, and by appointment.

Prerequisites MATH 470 or 471 or 570 or 571.

Text Topology (2nd Edition), by J.R. Munkres

Contents The course will begin with some set-theoretic preliminaries as found in Chapter 1. Sections 1–6 and Section 8 contain review material from discrete mathematics and are left to the student as reading. The basic material of the remaining sections of Chapter 1 will be discussed at the beginning of the course, while the more advanced set-theoretic results will be covered later, as necessary.

Working through Chapter 2, we will learn about the modern treatment of topological spaces, continuous functions, metric spaces, product and quotient spaces. We will then investigate, in Sections 23–29 of Chapter 3, the important concepts of connectedness and compactness in their most general settings. Chapter 4 will introduce us to a useful scheme for differentiating various qualities in topological spaces, namely the countability and separation axioms, culminating in Urysohn’s Metrization Theorem and Tietze’s Extension Theorem.

As time permits, we will discuss Tychonoff’s Theorem [§37], Nagata-Smirnov’s Metrization Theorem [§40], Ascoli’s Theorem [§47], and/or Baire’s Category Theorem [§48].

Website The above website features hints to selected homework problems and additional reading. Please visit this site regularly for course announcements and up-to-date deadlines.

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**Homework**  Homework assignments will be posted online weekly.

**Examinations**  There will be two midterm examinations. (See timetable.) The comprehensive final exam will be held on Friday, May 5, 9:45–11:45 am. Each exam will have an in-class and a take-home component.

**Evaluation**  Each exam, including the final exam, constitutes 25% of your grade. Homework accounts for the remaining 25%.

The approximate grading scale (in percent) is:
A: 90 – 100, B: 80 – 90, C: 70 – 80, D: 60 – 70, F: below 60.

**Timetable**  A tentative schedule is attached.

See above website for changes and updates.

**Deadlines**  The last day to change a course is Friday, January 13. The withdrawal period is Saturday, January 14, through Monday, March 20, 4:00pm. During this period students can elect to receive a “W” for the course by completing and submitting the proper form to the Registrar’s Office.

**General Remarks**  
(1) Students are expected to come prepared to all meetings, having read upcoming sections of the textbook. Be always up to date.

(2) It takes time to digest and master new abstract concepts. Expect to study for a minimum of two to three hours outside of class for each hour in class. Missing class is a major setback!

(3) Everybody is strongly encouraged to form study groups with classmates. However, on assignments, credit should be claimed only for one’s own work. Moreover, *collaboration on take-home exams is not permitted*.

(4) If you need course adaptations or accommodations because of a disability, please contact me as soon as possible. Ball States Disability Services office coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodations can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

(5) Please turn cell phones off during class. Thank you.